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CASE OF HYDROPTHALMIA AND ENUCLEATION OF THE
EYEBALL.

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By B. JOY JEFFRIES, M.D.

Mrs. A. B., æt. 25, low stature, very stout, residing in New Brunswick, began, in May or June of 1854, to have a "burning sensation" in the left eye, accompanied with "general pain" in the eye and redness. This latter was "better and worse at times." The pain was almost continuous. She applied to regular physicians, all of whom recommended poulticing the eye. This she did three or four times, but "came to the conclusion that poultices would not do, and so left them off." She afterwards used vinegar and water. The eye still seemed for a long time to remain *in statu quo*. In August of the following year, 1855, she came to Boston, and staid through the winter, going in the spring of 1856 to reside in a neighboring town, where she has been since.

At this time, four years ago, she applied to a physician of this city, with pain and inflammation in the eye. Patient says she was told that she must wait, because the other eye would get into the same state, and then an operation on both would cure them. Repeatedly replied that no name was given to the disease, and says that at that time the cornea ("the sight of the eye") was not transparent, she being at the time just able to count fingers. A stimulating wash was ordered, to be followed by a soothing one. These had no effect on the pain or inflammation.

She afterwards applied to another physician, who also did not name the disease, but directed a wash, which, however, had no effect. One year ago, in the fall of 1859, she went to a quack three times a week for three weeks. So far as can be made out from patient's description, he punctured the eyeball behind the ora serrata. This seemed to relieve the pain for about one day, and then it came back again. She afterwards went to him again, in all, she thinks, some four or five months. After this, she went to another quack oculist,

who said the affection was "nothing," and applied some very strong wash, "which flashed pain so over the side of the head that she forgot the pain in the eye, but in a little while it came back again." To this one she went but a few times. Had been advised but did not try spiritualism, &c. &c. Was told by a physician in the town where she resides, that the disease was "floating cataract."

In July of 1860 she applied at the Massachusetts Eye and Ear Infirmary, where the surgeon in attendance told her that the eye should be removed. Dissatisfied with this, she went away. The record on the books of the Infirmary is: "Disorganization of the left eye. Pain off and on for six years. Swelling two years. Choroid shining through. Exudation points in cornea."

The same day she came under my care, the condition of the eye being as follows. Upper and lower lid of left eye somewhat swollen and discolored by venous congestion. Globe enlarged and apparently protruding. Lids could be easily closed over it. Corneal curve reduced to that of the sclerotic. Cornea filled with patches, apparently extending through its whole thickness, of whitish deposit. These were not sufficient to prevent the iris being seen, which appeared somewhat pressed back. The anterior chamber large. Iris apparently of natural color. Pupil small, and, so far as could be seen, black. Conjunctival vessels enlarged and distended. Anterior choroidal vessels distended, and irregularly showing through the sclerotic, with dark blue color. From the enlargement of the eye, the congestion, and this bluish-black look of the anterior portion, the first glance would have very naturally suggested melanotic growth. To the touch, the eyeball was yielding, but elastic, the cornea bending and altering its curve as readily apparently as the sclerotic. The pain had been continuous—worse at night, less in the morning. There was no pain, and had been none, in the other eye, which appeared perfectly normal. With the affected eye the patient could count fingers held before it, and exhibited much greater power of vision than the general appearance of the eye would have indicated. This showed that the *choroid*, posterior to the *ora serrata*, and the *retina*, could not have become affected, at least to any great extent. The external appearances were also limited to the anterior third of the globe.

The case was therefore considered to be one of serous inflammation of those portions of the eyeball supplied by the long ciliary and muscular arteries and their accompanying veins, or if a recognized name is asked for it, *staphyloma sclerae anticum (annulare)*, dependent upon hydrophthalmia anterior. The course and distribution of the above-mentioned arteries and veins may be seen in Soemmering's beautiful plates, which have been copied ever since they were published, the latest re-issue of which may be found in Thomas Nunnelly's work "On the Organs of Vision," London, 1858. It will be seen that the anterior third of the bulb has quite an independent vascular circle. And this will explain why Beer, so many years

ago, in Vienna, was correct in his acute division of internal inflammations of the ball into anterior and posterior. In examining the German, French and English modern treatises on the eye, it will be found that Arlt, now in Vienna, gives in his hand-book the best description, and the above explanation, of this form of hydrophthalia. (Buch III., pages 12 and 20.) It is also dwelt upon in Stellwag von Carion's work, just published. Other authors do not seem to have given it so much notice as it perhaps deserves.

The first question which naturally presented itself was, is this a case for iridectomy? This was answered in the negative. There were no signs of great internal pressure. The bulb was soft. Moreover, the cornea was so yielding, with apparently commencing softening and degeneration, that any large opening of the anterior chamber was contra-indicated. Von Graefe, from his own experience of iridectomy in hydrophthalia, says: "I have not seen any injurious effect from the formation of artificial pupil, but neither have I been convinced of any curative action, so that at present I cannot recommend imitation in similar cases."—Sydenham Society's Translation of Von Graefe's Iridectomy in Glaucoma.

The choice, therefore, was between simply puncturing the eye and enucleation or sinking. As there had been no pain as yet in the other eye, and the sight was still sufficient to distinguish fingers, &c., the patient was told that there was a *possibility* of saving the eye by repeated puncturing the cornea. Being very averse to having the eye removed, she readily agreed to this. The cornea was punctured with a reclinatioon needle, and a large portion of the aqueous humor allowed to flow off. There was instant relief from pain, the conjunctival inflammation decreased, and also the swelling of the lids. This state lasted for a fortnight, when the patient returned with pain in the eye. The eye had improved in appearance, and was again punctured, with immediate relief as before. The anterior chamber was thus punctured on the return of pain or uneasiness every little while (that is, at intervals of a few days to a fortnight) from this time, the latter part of July, till about the first of October, at which time there were symptoms of returning conjunctival inflammation. The patient was now told that the chances of restoration of sight were very small, and that it was better to remove the globe. The cornea, however, was again punctured, and the patient returned home, the eye feeling quite easy. She was told that if there should be any increased pain in the affected eye, or any pain in the other eye, she must come to Boston prepared to have the globe removed immediately.

Oct. 11th, pain came on very severe at night, lasting all night; in the morning there was complete loss of sight and great pain, also pain in the *other eye*, which she never had had before. The following day she came to Boston, with the pain still continuing. There was general conjunctival reddening, the lids swollen, and pain in the other eye. She was told the eye must be at once removed. This

was done the following morning, under ether. It was intended, if possible, to remove the globe from within the capsule. From the projection of the anterior portion of the globe, the external rectus muscle, which it was intended to grasp with the forceps (together with the conjunctiva above it), was seized with difficulty. The inflammation had fastened it down to the bulb, so that the muscle was stretched through its opening in the capsule before it could be cut off. The other muscles presented no great difficulty. The conjunctiva was cut off pretty close to the cornea, with the exception of that portion, as we have said, lying over the external rectus. There was some bleeding from the conjunctival vessels, which soon stopped upon removal of the globe. A simple cold-water dressing was applied over the lids, with a bandage to keep it in place. Nothing was put between the lids. The effects of the ether lasted some little time, but in the afternoon, when the patient was again seen, she reported no pain in the socket, simply an uneasy sensation when attempting to open the other eye. No pain in the other eye, and much more comfortable than for some time past. The few following days, apparently from the ether, there was dizziness, slight nausea and loss of appetite. On the third day there was some swelling of the lids and cheek, which cold applications reduced. On the fifth day after the operation she was up, and on the tenth felt able to, and did, return home, some fifteen miles from the city, having had no pain in the socket of the eye removed, and no pain in the other eye, Oct. 24th, 1860.

Nov. 17th, five weeks after, the patient came to Boston on account of some muco-purulent discharge from the orbit. The parts had cicatrized well, leaving a good deal of motion to the remaining capsule. The conjunctivitis, which had caused the discharge, was probably aggravated by the lids turning in and producing irritation. Had had no pain or trouble. Thorough washing with warm water, and occasional injections of arg. nit. gr. iij. to z i. aquæ , were ordered.

Dec. 19th, one month later, patient appeared, having still a slight secretion from the orbit. Can work about with right eye, and read in daylight, but not by candle-light. Has been no pain. Was told she could now wear a false eye. She had one selected, and commenced wearing it.

Dec. 3d, 1861, a year afterwards, patient reports that there is, and has been, a constant discharge from orbit. The conjunctiva appeared slightly irritated, and some puro-mucous secretion. She wears the eye about half the time. Prefers to wear it, as it is much more comfortable. Uses the other eye for sewing, reading, &c., without having to think about it. Ordered the same solution as before, when the discharge was profuse.

Jan. 17th, 1863.—Patient's husband applied to-day in reference to procuring another artificial eye, the first having been accidentally broken about a year ago. Says there is still some discharge, but no

pain or other trouble in the remaining eye. Prefers to wear an artificial eye.

Examination of the globe 9 hours after removal.—Bulbus has portion of external rectus attached to it. Posterior half of bulb not much if any enlarged. Anterior half enlarged. Cornea flattened, soft, irregularly opaque, showing marks of punctures. Iris just visible. Pupil small. On section through the plane of the longitudinal axis, anterior chamber perfect. Pupil closed with thin layer of lymph, and edge of iris attached to the lens. Lymph on anterior surface of iris. Curve of cornea same as that of sclerotic. Cornea not thinned, no marks of ulceration. Where opaque, so entirely through. Fibres of section, under the microscope ($\times 250$), irregularly broken, and not interlaced as natural. Line of demarcation between cornea and sclerotic not well defined in section. Lens clear. Nucleus moderately well marked. Ciliary muscle not very well developed, *apparently atrophied*. Posterior half of the eye appeared healthy. Vitreous humor clear, and *not* broken down. Retina apparently healthy, not detached. The optic nerve entrance looked healthy. The vein distended with blood. Choroid coat not rich in pigment, although the anterior pigment layer did not appear broken down within the range of the retina; anteriorly to this it did not appear *so* regular. Portions of choroid from equator of the eye, under the microscope, appeared healthy. In fact, all behind the ciliary muscle was well adapted to study the pure anatomy of the part.

Remarks.—Whether to remove the globe or sink it, has always been a question of debate. In the above case there seemed to be no doubt, as the other eye had become affected from sympathy, and therefore it was desirable to remove all cause of irritation, such as a suppurating stump would have been. And since the anatomists have revived the surgeon's remembrance of the existence of the capsule of Tenon, enucleation has, where practicable, taken the place of extirpation.

As the standard works in our language on anatomy do not seem to recognize the existence of Tenon's capsule, perhaps it may not be out of place to recal its anatomy and bearing on surgery here. It was imperfectly known to Galen, who says: "Sexta quædam tunica extrinsecus prope accedit, in duram tunicam inserta." (De usu part. cap. 2.) Reald. Columbus, in his "de re anatomicâ," Venet., 1559, lib. x., calls it "tunica innominata." Tenon, 1804, described it more fully in his "Memoires et observations sur l'Anatomie," page 200, and it has received his name, Hyrtl calling it "fascia Tenoni," or "tunica vaginalis bulbi." Malgaigne was the first to point out its surgical importance. He considered it an aponeurosis, and called it albuginea. In 1841, O'Ferrall, in Dublin, and about the same time Bonet, in France, *re-described* this membrane. The former's treatise may be found in the 19th volume of the *Dublin Journal of Medical Science*, 1841. An extract from this, with a good drawing

of a dissection, is in "Haynes Walton's Operative Ophthalmic Surgery," London, 1853.

The capsule is a fibrous membrane, commencing at the edge of the orbit, running behind the conjunctiva on to the globe up to the cornea, from thence back over the bulb to the optic nerve. Of course, in operating for strabismus, the object is to keep within it, and cut the muscle after it has penetrated the sheath of the globe, in which the latter readily turns, being loosely connected with the sclerotica.

The following method of operating for enucleation is not generally described, but is simplest. The conjunctiva over the outer or inner rectus is raised with forceps and cut with curved, probe-pointed scissors, the sclerotic insertion of the tendon seized and firmly held with forceps. The tendon cut with scissors. Then the conjunctiva slit up close to the cornea, the other straight muscles, or rather their tendons, divided with the scissors. Next the optic nerve, when the globe comes forward, and we separate the oblique muscles, leaving the capsule and the muscles attached, to move it when an artificial eye is adapted.

DIALYSIS.*

HUMAN ingenuity is advancing the art of chemical analysis with rapid strides. It is becoming no easy matter to keep oneself at all *au niveau* with the discoveries in this department of science. While yet fascinated with the beauties and subtleties of Spectral Analysis, our attention is claimed for another analytical discovery, less beautiful it is true and less subtle, but susceptible of much wider application, yielding results of greater practical value, and therefore possessing more immediate interest to us as medical men. We allude to the discovery of Dialysis, which we owe to Mr. Graham, the present Master of the Mint. It may be fairly described as a kind of royal road or short cut, enabling us to arrive at analytical results previously unattainable, or attainable only by processes far more complicated, far more open to fallacy. Except in rare instances it employs no chemical reagents; it achieves its end merely by availing itself of certain physical properties inherent in the substances to be analyzed. Our readers may possibly welcome an account of the principles of this new analytical process, the mode of its practical application, and the peculiar, valuable results it enables us to attain.

Dialysis may be defined as analysis effected by liquid diffusion—in other words, the separating of liquid substances from each other by taking advantage of their different rates of diffusibility under particular circumstances. Our knowledge of the laws of liquid diffusion was exceedingly imperfect up to the summer of last year,

* "Graham on Liquid Diffusion applied to Analysis," *Royal Society's Transactions* for 1861, Part I. "Redwood on Dialysis," *Pharmaceutical Journal* for April, 1862. "Daubeny's Lectures on Agricultural Chemistry," *Gardeners' Chronicle* for December 7 and 14, 1861.

when Mr. Graham published the results of his elaborate researches on this subject. So much of these results as is necessary in order to understand the principle of dialysis, we will endeavor very briefly to explain.

First. There is a great difference in the diffusibility of different substances in the liquid state, just as there is in the gaseous state. If by means of a pipette we convey a solution of any substance (a salt for instance) to the bottom of a jar of distilled water so as to form a distinct stratum, and then leave the jar undisturbed in a uniform temperature, the dissolved salt will always diffuse into the superincumbent water at a certain rate within a certain time. This rate will vary with the nature of the medium into which diffusion takes place; if, for instance, some other fluid be used instead of water. Briefly expressed, the fact amounts to this—that “different substances in solutions of equal strength diffuse unequally in equal times.” (Redwood.) For instance, common salt diffuses into water twice as fast as Epsom salt, and this latter twice as fast as gum Arabic. Again, if instead of a single substance we convey a mixed solution of two or three substances to the bottom of the said jar, these substances, notwithstanding their mixture, will still maintain their respective rates of diffusion, the more diffusive body travelling most rapidly and showing itself first and most largely in the upper strata of superincumbent liquid. Hence, what in the case of a single body is mere diffusion, in the case of two or more bodies mixed together is a diffusive separation of them from each other. Such separation of them will be more or less complete in proportion to the difference between their respective diffusibilities.

Secondly. Between highly diffusive substances on the one hand, and feebly diffusive substances on the other, Mr. Graham has established some important grounds of distinction. The only one, however, which concerns us at present is this—viz., that the former affect the crystalline condition, while the latter are not crystallizable, and have, further, the peculiarity of becoming gelatinous when combined with water. Hence, highly diffusible substances he classes together as “crystalloids,” and feebly diffusible ones as “colloids” (from *collin* or gelatine, the type of the class). Among the colloids are hydrated silicic acid, hydrated alumina, and other soluble metallic peroxides, isomorphous with the latter body, together with gelatine, albumen, starch, dextrin and the gums, caramel, vegetable and animal extractive matters.

Now, it is characteristic of the bodies just mentioned that, while they are more or less permeable to crystalloids, they are wholly impermeable to other colloids like themselves which may be in solution. For instance, suppose a layer of firm jelly, or some other colloid of a more convenient nature (such as an animal membrane) to be interposed between water on one side, and a mixed solution of common salt and albumen on the other, it will wholly intercept the albu-

men, but will allow the salt freely to diffuse through its substance into the water on the opposite side.

It is plain, therefore, that although, as was above shown, simple diffusion into water will partially separate mixed bodies from each other, a far more complete separation will be attained by causing the diffusion to take place into water, not directly, but through an intervening membrane, such as a bladder or sheet of parchment. And this is just what is done in dialysis, which is nothing more than the diffusive separation of crystalloid from colloid bodies through a septum of gelatinous matter, the septum allowing the passage of the one, not of the other. The apparatus needed to conduct this process is the simplest possible. It consists of (1) a basin or deep dish containing three or four inches of pure water; (2) a "dialyser," which is merely some kind of membranous septum secured by a bit of string around a light hoop of sheet gutta-percha, so as to form a vessel like a tambourine. Of all the substances yet used for dialytic septa, the most convenient has been found to be the "parchment-paper" made and sold by Messrs. De la Rue and Co. Care must be taken that it is not porous. The mixed fluid to be dialysed is first poured into the hoop upon the surface of the parchment-paper to the depth of half an inch or so. The dialyser is then floated on the basin or dish of water, into which the crystalloid constituents of the mixture gradually diffuse, the colloid constituents remaining behind. Mr. Graham found that half a litre of urine, dialysed for twenty-four hours, gave its crystalloidal constituents to the external water. The latter on evaporation yielded a white saline mass, from which urea was extracted by alcohol in so pure a condition as to appear in crystalline tufts upon the evaporation of the alcohol. Professor Redwood observes that ordinary septa can only be used in dialysing aqueous solutions; a septum suitable for dialysing alcoholic or ethereal solutions not having yet been discovered. Some form of collodion, he suggests, may possibly answer the purpose.

The process of dialysis admits of some very important practical applications, to which we will briefly allude. (1.) It permits of the isolation of various chemical substances in a state of purity in which we were not previously aware of their being able to exist. For instance, chemists had hitherto never succeeded in obtaining a perfectly pure solution of silica. The solution of it, obtained by treating silicate of soda with hydrochloric acid, was not pure; it always contained a certain quantity of hydrochloric acid and chloride of sodium, which resisted all further attempts at separation. But by subjecting the said silica solution to the process of dialysis, the acid and salt, being crystalloids, diffuse out, while the silica, being a colloid, remains behind dissolved in water and perfectly pure. In like manner, dialysis enables us to obtain solutions of peroxide of iron, alumina, and several other bodies, perfectly free from the salts or other chemical agents hitherto indispensable to their solution. (2.)

In medico-legal inquiries, it affords a most valuable means of separating arsenious acid and the various poisonous metallic salts from their organic solutions. For instance, let a portion of tissue suspected to contain arsenic be chopped into small pieces, soaked in pure water, and then thrown on the dialyser. At the end of twenty-four hours the arsenic, even if its quantity be infinitesimally small, will have diffused into the external water in a state fit for the immediate application of chemical tests. The poison is thus eliminated free from all organic impurity, and without employing any other agent than distilled water—advantages which any one conversant with the usual processes for separating minute quantities of arsenic will not fail to appreciate. Vegetable poisons, such as strychnine, morphine, and the other poisonous alkaloids, may be separated from their organic solutions in precisely the same manner. (3.) Professor Redwood suggests its application to another purpose, viz., “the separation of the more active crystallizable constituents of vegetable substances from inert colloidal matter, and the production in this way of a new class of medicines, containing the more active principles of plants, partially purified, and in the state of combination in which they exist in nature.” Such preparations would occupy an intermediate place between tinctures, decoctions, and extracts, on the one hand, and the pure, active principles which they often contain (such as alkaloids), on the other. The advantages of vegetable remedies in this form would be greater uniformity of strength, certainty of action, and convenience of administration. They would also keep better, and being void of all inert matter they would be *purely* medicinal, which in their present crude state they are not. The difficulties in the way of their preparation would be great, but probably not insurmountable. (4.) It affords a partial explanation of certain points in the physiology of animals and plants hitherto involved in much obscurity. (We say “partial” explanation, because, in all the processes about to be mentioned, a *vital* as well as a *physical* force is at work. At any rate, their full phenomena take place only where life is present; they cannot be imitated outside living organisms.) Professor Redwood instances the processes of absorption and secretion accompanying the act of digestion. The mucous membrane of the stomach and intestines may be compared to a dialytic septum between the blood on the one side, and the blood-making constituents of food on the other. Dilute liquids taken into the stomach diffuse through, or (as we generally say) are absorbed by, its mucous membrane. The plastic constituents of food, on the other hand, being colloids, “are retained in the stomach, while the act of digestion proceeds under the influence of crystalloids that are dialysed into that organ, and then pass on to undergo new changes connected with absorption, assimilation and excretion.” He further observes that “the action of medicines must be considerably influenced by the state in which they exist as crystalloids or colloids. Thus, iron in the state of chloride, sulphate, or other crys-

talloidal salt, would be diffused through the walls of the stomach; but not so if in the state of a colloid, such as basic chloride or basic nitrate, in which state it would pass into the intestines, exerting its action probably through the entire length of the alimentary canal." When we know more of the comparative diffusive power of different medicinal preparations than we do at present, we shall probably prescribe them with greater success.

Lastly. Professor Daubeny, of Oxford, has shown, very clearly and fully, how and to what extent the principle of dialysis explains certain phenomena of vegetation—such as the transmission of sap through a plant, the separation of its various secretions from each other, and their maintenance in a state of isolation in appropriate receptacles. (1.) The sap is propelled upward through the plant partly by capillarity, partly by atmospheric pressure, owing to the evaporation from the leaves and the partial vacuum thereby occasioned. But it makes its way *into* the plant, in the first instance, by endosmosis through the spongioles of the roots. (2.) The particular compounds secreted from the sap in different parts of the plant are maintained in their state of isolation and purity by the same principle of dialysis. The peculiar juices of plants (starch, gum, oils, &c.) are generally colloids, and therefore have no tendency to pass through the walls of the cells in which they have been elaborated. The different acid and alkaline products, on the other hand, being crystalloids, permeate membrane freely, "but are only temporary constituents or steps in the series of changes which are intended to convert carbonic acid into sugar and starch, and they are consequently got rid of either by exosmosis or else by some other chemical process by which they are converted into glucose or fruit sugar." The principle of dialysis has likewise important bearings on the nature of the ultimate molecules of matter, and on certain geological phenomena. These, however, possess more interest to the geologist and physicist than the physician.—*Medical Times and Gazette*.

CLINICAL INSTRUCTION IN THE HOSPITALS OF VIENNA.

By E. L. HOLMES, M.D., OF CHICAGO, ILL.

ONE of the most popular clinical lecturers in Vienna is Prof. Oppolzer. One can scarcely conceive a more practical plan of imparting medical knowledge than that adopted by this distinguished lecturer. Gifted with great fluency of speech and possessing a wonderful degree of erudition in everything pertaining to the past and present history of medical literature, united with an immense experience in the observation and treatment of disease and in public instruction, he is able to make his lectures interesting and of the greatest good to his listeners. Not only students, but old practitioners testify by their continued presence to the great merit of these lectures.

Every patient, as soon as he enters the wards of the lecturer, is assigned to the care of a student, whose duty it is to make a careful examination of the symptoms and keep a record of the case as long as it remains in the hospital; at the clinic the professor questions the student in presence of the class in everything pertaining to the case, calling the attention of all to every important point and comparing it with other similar cases in the ward. At the same time, the secretions are carefully examined by means of the microscope and test tube.

The clinics are usually about an hour and a half long, and are given six days in the week.

The clinics of Prof. Scoda are also worthy of notice. Although he is much less fluent and generally considered less interesting in his manner than Prof. Oppolzer, his lectures are none the less instructive. They are principally upon diseases of the chest. There are a sufficient number of patients and ample opportunity for every student to examine each patient for himself. Private courses of instruction in auscultation and percussion are given by Professor Scoda's assistant.

These clinics are followed by those of Professors Schuh and Dumreicher in the surgical wards. The general plan of instruction is the same as above described. Everything relating to operations, to the diagnosis and treatment of injuries and surgical diseases, is carefully taught, with cases enough to illustrate every important point. I should infer, after considerable observation, that injuries requiring surgical treatment, especially fractures, were rare in Vienna as compared with our own large cities.

The clinical lectures in obstetrics are particularly important to the American student, who has little opportunity of receiving clinical instruction in this branch of his profession in America.

There are upon the average, I think, eight births a day in the hospital. The patients are delivered in a room assigned for the purpose, and then carried to the wards, where they remain nine days, or until they are able to leave. The class is carefully instructed in the mode of making examinations per vaginam, and of learning the position of the foetal head and body during labor. The whole process of parturition is thus learned by repeated observation. There are also private courses on the use of instruments and "turning," the cadaver, from which the viscera have been removed, serving the purpose of a manakin. A dead foetus is placed in different positions in the pelvis, which the students are to examine in turn and give their diagnosis. After this the operation of turning or the application of forceps is made, and the foetus delivered. When the student has taken this course on the application of instruments, he is permitted to use them, when necessary, on the living subject in the lying-in wards. One thus has an opportunity of watching several hundred cases of labor, of having a small number under his own care, and of learning practically the use of instruments; he is

also taught the duties of the lying-in room in reference to the mother and infant during the nine days subsequent to delivery.

The clinics of Prof. Hebra on diseases of the skin are one of the most popular courses in the hospital. In his wards are nearly two hundred and fifty patients, and with this large number of cases he is able to illustrate all the important points in the commencement and progress of every form of skin disease. The wards are open to the students, but Prof. Hebra usually delivers his lectures in a small amphitheatre, the patients being brought before the class. After he has called the attention of the class to the points worthy of notice in each case, the patient passes from one student to another, thus enabling each to examine him more closely. The male patients are wholly naked at the clinics; the females being dressed in loose garments, to permit a ready examination of any part of the body. These clinics are given five days in the week.

The lectures of Prof. Sigmund on syphilis are very popular. There are two or three hundred cases in his wards. A careful examination of these, in connection with the lectures of the Professor, will make the student more familiar with this disease than he can be after years of reading and observation in private practice.

Students interested in diseases of the eye will find the clinics of Professors Arlt and Jäger interesting and instructive. In these wards are about two hundred patients. The student has ample opportunity of acquiring a knowledge of the use of the ophthalmoscope, of witnessing a large number of operations, and of acquiring skill in the diagnosis of ophthalmic disease.

In addition to the ordinary clinics as above described, there are private courses of instruction in the clinical study of every class of disease, including treatment, operative and medical. These courses are scarcely less beneficial to the student than the others, as they give him an opportunity of reviewing what he has already learned from the different professors.

I cannot close this short notice of the clinics of Vienna without alluding to the facilities given to the student for the study of pathology. There are, upon the average, five *post-mortem* examinations a day, at which students can be present, notice always being given, when a patient dies, of the hour at which the autopsy will be made. Generally, however, the students prefer to be present at the lectures of Prof. Rokitansky, at which all the morbid specimens of diseased organs collected each day are exhibited. The private course of Rokitansky's assistant is very useful, since he not only demonstrates all the fresh specimens, but visits the great Pathological Museum, for which Rokitansky has so long labored, and explains all the preparations, illustrating the effects of the disease of each organ.

The Pathological Museum may justly be regarded with pride by the Medical School of Vienna. The building is a large fire-proof structure of stone and brick, erected at a cost, as I was informed, of \$40,000. The Museum is a large hall, tastefully fitted and orna-

mented. The other portions of the building are used for the reception of the dead, previous to burial, for dissections, for the ordinary *post-mortem* examinations of the hospital, and for the examination of cases of sudden or violent death in the city. Each Professor has a private room for the examination of his own cases. Whatever may be said of the advantages offered by other cities for the study of surgery or medicine, I think no city can claim for its hospitals better facilities for the study of pathology than can be found in Vienna.—*Chicago Medical Journal*.

Bibliographical Notices.

A Practical Treatise on Dental Medicine, being a Compendium of Medical Science, as connected with the study of Dental Surgery. By THOMAS E. BOND, A.M., M.D., Professor of Special Pathology and Therapeutics in the Baltimore College of Dental Surgery. Third Edition, revised, corrected and enlarged. 12mo. Pp. 411. Philadelphia: Lindsay & Blakiston. 1863.

THE object of the author of this work was to prepare a compendium of such diseases as are in any way likely to be associated with those conditions of the teeth calling for the skill of the dentist. The work begins with a brief account of the causes, symptoms and treatment of disease in general. This is followed by a chapter on inflammation, and the remainder of the book is taken up with notices of ulcers, tumors, neuralgia, and various other morbid and traumatic affections of the mouth and the surrounding parts, giving the most important points in their diagnosis, and some rules for treatment. The obvious deduction from reading this book is, that no one is fully prepared for the practice of dentistry who is not well versed in the principles and practice of medicine. As a whole, the author may be said to have succeeded as well as the limited nature of his plan would allow. We notice some slight blemishes and inaccuracies in the derivations of words as given in the notes. In treating of anæsthetics the author says:—"Ether is used by some surgeons, and especially by some dentists, because it is supposed to be less dangerous than chloroform. But there is no reason to believe that when anæsthesia is accomplished by ether the danger to the patient is less than when the same condition results from chloroform. Three years ago nineteen deaths from ether were reported in Europe." Of the accuracy of which last two statements we beg leave to express a respectful doubt.

THE BOSTON MEDICAL AND SURGICAL JOURNAL.

BOSTON: THURSDAY, JANUARY 29, 1863.

DEATHS FROM CHLOROFORM.—The following notice, characteristically French, is from the *Gazette Médicale de Lyon*, a journal long an advocate for the use of sulphuric ether.

"We are not wearied with reporting, any more than surgeons are with reproducing, the deadly action of an agent which was once called beneficent. A sense of duty and the hope of opening eyes so obstinately shut, stimulate us in an endeavor at which we work almost single-handed. If anything could cool our ardor, it certainly would be the spectacle of the strange and growing apathy evinced by the authors and reporters of these surgical mishaps. We present our readers with a new and improved formula for these narratives, which, latterly and on too many occasions, have been multiplied in English surgery. 'A young girl, seventeen years old, was received at the hospital on the 23d of July last, and died on the 5th of August. She had received an injury by falling on an iron bar, and a short but painful operation was judged necessary. She consented to be put under the influence of chloroform, and as she was very nervous, great precautions were taken in its administration; but, in consequence of a feeble and fatty heart, which was not guarded against, she died a short time after the commencement of the inhalation of the anæsthetic.—(*British Med. Journal*, Aug. 16, 1862.)' Here, then, is a young girl of seventeen, who, instead of being put to sleep, dies in a few minutes. Is any one disturbed by the event; is even any astonishment felt? Not the least! Her heart was 'feeble and fatty,' and they 'hadn't guarded against that.' This clears them all. Surgery is justified, and the operator passes on to the next."

In the *Medical Times and Gazette* of Nov. 1st, 1862, the full details are given of an inquest held upon the body of a man dead from chloroform. His thigh was to have been amputated, but whilst the operator was selecting his knife from a neighboring table his patient expired. The gentleman in whose hands this case occurred is spoken of as "one of the best surgeons in Gloucestershire," and it is clear that he used every precaution and care. After stating to the coroner that Dr. Snow's inhaler was used, in order to "reduce the inevitable risk of chloroform to a minimum," he says, "had it been possible to examine all the organs separately, before death, as I did after, I should have concluded that, of all patients I had ever seen, he was the very one who might fairly have been supposed to have taken chloroform with the greatest impunity." "That such a person should so have died, demonstrates that there are individuals in whom unconsciousness from chloroform is necessarily incompatible with life. At the same time a medical man is unable to select such from the general mass."

In the same Journal, three weeks later, Dr. Charles Kidd, best known for his persistent efforts to prove chloroform an absolutely innocuous agent, informs us that there have been "two deaths at one London hospital, within a few days, very recently, which were not noticed by the journals." We might add to these a fatal case occurring at Washington, within the last two months, in a Government hospital, of which no public mention has been made.

Is it strange, however, that incidents like these should be of frequent occurrence, when, in face of all the dangers admitted by the users of chloroform, the latest and most pretentious work on Surgery published in England, devotes an article to the subject of anæsthetics, only alluding to sulphuric ether in a single line, which barely mentions its connection with their early history, and instead of sounding the alarm which is everywhere felt, fills up its pages with a consideration of certain laryngoscopic demonstrations of the phenomena of

stertorous breathing, and hardly deigns to deal with so common-place or practical a matter as the method or means of inducing anæsthesia?

If the facts which already exist are faithfully collated by the Committee of the Royal Medico-Chirurgical Society, recently appointed to investigate deaths from chloroform, the hopes of our French contemporary can hardly fail to be encouraged, and the prejudices with which we in Boston have been charged, proved to be founded on no local or narrow-minded grounds.

NARROW ESCAPE FROM DEATH BY CHLOROFORM.—Since the above was written, our attention has been called to the following case, reported in the London *Lancet* for Nov. 15th. The patient was about being operated on for the removal of a bulbous nerve from a painful stump.

"Chloroform was administered on the 14th, and when complete insensibility had been produced, Mr. Cock commenced his incisions on the stump. At this moment the patient was observed to become suddenly pale, and the breathing instantly ceased; the pulse was found also to have stopped. Immediately the most active efforts were made to restore animation. Cold water was dashed upon the face and chest without avail. Mr. Cooper Forster used artificial respiration by compressing the chest laterally; the lower jaw was forced downwards, and the mouth kept widely open; whilst the tongue was seized by Mr. Bryant, and held out of the mouth by means of a flat forceps. In the course of two or three minutes the artificial respiration succeeded in producing a sigh, and as the pulse commenced to beat, it was sufficient encouragement to continue it. In three or four minutes more it was quite successful, and the breathing and circulation were established, the color returning to the cheeks. There can be no doubt that if the most energetic means had not been at once resorted to, the result would have been fatal. The great functions of respiration and circulation appeared to cease simultaneously. It is more than probable that the pulse was the first to give way, and that syncope preceded the asphyxia.

"This makes the sixth or seventh case we have now seen of nearly fatal issue within a definite period of time, and the result of continued experience seems to prove that the best chance is held out for the safety of the patient by opening the mouth wide, pulling the tongue forward to free the glottis, and then actively employing artificial respiration, as was practised here. If matters still remain doubtful, the forefinger should be introduced far back into the throat, to ensure that the glottis is not closed by its valve."

In *The American Journal of the Medical Sciences* for the present month Dr. Bowditch gives, in a valuable paper on Paracentesis Thoracis, the results of his observation of one hundred and sixty instances in which this operation was performed, on eighty persons, in all but ten of which it was done by himself. Most of our readers are probably aware that the great success of this operation in Dr. Bowditch's hands is ascribed by him, and no doubt rightfully, to the use of a very small exploring trocar and canula, and suction pump, by which a trifling wound only is inflicted, which heals at once. The whole question of the seriousness or innocuousness of paracentesis thoracis may be considered as demonstrated to depend entirely on the size of the

instrument employed. To Dr. Morrill Wyman, of Cambridge, Mass., the credit of suggesting this method is due. The following extracts from this valuable paper are particularly interesting. Dr. Bowditch, having been asked his opinion as to the comparative results of tapping the right or left side of the chest, Trousseau maintaining that pleurisy of the right side is often or always tuberculous, gives his own impression as against the truth of the assertion.

"On referring," he says, "to the brief summaries, and not to the original notes of my cases, where I find the sides named in 25 cases, I find that in these the operation was performed with the following results:—

	PLEURISY OF	
	Right side. 4 times.	Left side. 5 times.
Death		
Cure entire, without symptoms of phthisis, except in one, but pleurisy was cured in that	9	4
Doubtful result	1	2
	14	11

"These data do not exactly answer the question proposed; but if tubercles always or more frequently exist in pleurisy of the right side, we should, *à priori*, anticipate more unfortunate terminations of the operation of paracentesis of the right than of the left side. My experience proves exactly the reverse, and may be expressed, if deduced from the above table, as follows:—

"Of 25 cases, 14 were of the right side, 11 of the left. Of the 14 of the right side, only one person is mentioned as having tubercles, and in that the pleurisy was cured and the pulmonary symptoms mitigated.

"Of the persons tapped in right side, 28·57 per cent. died; 64·28 per cent. were cured, and 7·14 per cent. remained doubtful. Whereas, of the 11 cases of the left side, 45·45 per cent. died, 36·36 got well, 18·18 were doubtful.

"In other words, twice as many have got well from tapping the right as the left; and only half as many have had doubtful results from operations on the right, as in those where the left side has been tapped.

"Hereafter, if my cases are any criterion wherefrom to judge, I shall regard an operation on the right side as much more favorable than one on the left; which I can hardly think would be the case were all right side pleurisies tuberculous."

As to the questions—when shall the operation be done? and where shall the puncture be made? Dr. Bowditch says:—

"Experience teaches me to operate in every case, however recent or chronic may be the attack, provided there is permanent or occasional dyspnoea of a severe character, evidently due to the fluid. I have, of course, more hope of doing good where the disease has not been of too long duration; is uncomplicated with phthisis, or any other disease, and where, moreover, the amount of fluid seems directly the cause of the trouble. I also deem it best to operate in *any*, even latent cases, where the pleural cavity gets full of fluid; and if, after a reasonable amount of treatment, the fluid does not diminish.

"The point originally chosen by Dr. Wyman and myself, viz., in a line let fall from the lower angle of the scapula, and between the 9th and 10th ribs, I deem the most appropriate point at which to make a

puncture. I have, however, tapped under the axilla, or in the breast, where the case seemed to require it. In selecting the precise intercostal space, on the back, I usually choose one about an inch and a half higher than the line, on a level with the lowest point at which respiratory murmur can be heard in the healthy lung of the other pleural cavity.

"I never wait until *pointing* commences; for then I am sure that pus will be found. If *pointing* without opening has commenced, I do not necessarily tap in that place, as recommended by the older surgeons, but seek the most depending point in the chest. While thus desiring to operate before a *local* distension shows itself, I dislike or refuse to tap where there is contraction of the intercostal muscles; and I am certain of getting fluid only where there is distension or flattening of the same."

And in fine, "The operation, like everything else in all the departments of human life, is imperfect. It cannot cure all. But it has relieved many, and will continue to do so, if surgeons will use it; it has been the prominent cause of relief in many more, and will be so hereafter, if men will theorize less and act more. It has been the sole means of saving life, I am sure, in a few of my cases; and I know some patients have died within the last few years, in New England, as I believe, for want of it, under the care of others.

"It is certainly innocuous, and gives so little pain, compared with the relief it affords, that patients have begged for it to be repeated again and again, as a mere matter of relief. In my opinion it ought never again to be allowed to fall into disuse by the profession. I regard any man who allows a patient to die of dyspnoea from pleuritic effusion, however great may be the complications with other diseases of head, chest or abdomen, as in the dilemma of him who is either wilfully neglectful of some of the means of relief or cure, now by experience proved to be always at hand, or ignorant of the simple and beautiful operation suggested by Dr. Wyman. To a certain extent I deem my connection with the operation somewhat providential. I had seen, in the earlier years of my practice, men die with sudden dyspnoea, or, after months of obscure disease, die with one pleural cavity filled with serum, and not a particle of other disease; and, finally, I have seen tubercular phthisis follow, after months of debility, from what was simple pleurisy at first.

"Having no surgical tastes myself, shrinking from the simplest operations, and doing nothing of the kind save when compelled to do so, I at times urged surgeons to operate. They declined, and men died. Finally, in cases where I had control, I took the responsibility, and asked the surgeons to do the manual they were more accustomed to than I was. Their plan was incision and dissection down to the pleura, and a suppurating wound as a consequence—a long, painful operation. At last Dr. Wyman's instrument and method came to my notice. I seized upon them as those I had long sought for. As Dr. Wyman and I were the only believers in the operation, it devolved often upon me. The result is the experience which I have given above. And now, as I have often said, I would as readily puncture the chest as I would draw a tooth, or vaccinate a child."

TREATMENT OF DIPHTHERIA. *Mr. Editor*,—I copy the following from the *St. Louis Medical Journal*, January, 1861, deeming it worthy
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republishing. It was reported by Dr. Newman, President of the St. Louis Medical Society.

AMOS SAWYER, M.D.

Hillsboro', Ill., Jan. 21st, 1863.

* * * * "Having heard that diphtheria was prevailing with great malignity in Lexington, Ky., I wrote to one of the physicians of that city, inquiring if there were any peculiar characteristics of the disease in that locality, and how far it was amenable to treatment, and what plan of treatment appeared best adapted, &c. Omitting to furnish any information upon general principles, he writes as follows as to his treatment.

"Dr. S. T. NEWMAN.

LEXINGTON, KY., Sept. 29th, 1860.

"DEAR SIR,—I received your letter a few days since, requesting my mode of treating diphtheria. In reply I would say, I give the muriate of ammonia in full doses, say, to a child 8 years old and upwards, ten grains every two hours (in solution), and ten drops of the sesquichloride of iron, in the intermediate hours; and these are not to be omitted for thirty-six hours; then rest four or five hours, and give them again in like manner. Continue this treatment for four or five days, according to circumstances, but at first cleanse the stomach with a gentle purgative; afterwards, should the bowels not act, once in twenty-four hours, give castor oil and ol. terebinth. one ounce of the former to one drachm of the latter. If the diphtheritic crust forms, or has formed to a great extent, in the throat, remove it with a fine sponge tied on a stick; the sponge should be wet with a solution of the pure nitrate of silver, 40 grains to one ounce of water, or sulph. cupri, one scruple to one ounce. This should be used only once a day. The cure should be completed by the use of tonics; I have found bebeerine the best. Diet nourishing. I have treated *three hundred and thirty-four cases* after this method, without the loss of one, and am now fully satisfied it is the proper mode of treating the disease.

Respectfully yours,

J. W. BRIGHT.

"Since the receipt of the above, I have been shown a letter from a very intelligent merchant of that city, stating that the treatment of Dr. Bright had been eminently successful. S. T. NEWMAN, M.D."

A WRITER in the *Washington Daily Morning Chronicle* urges the reorganization at the present time of the Medical Department of the Army. After setting forth the immense labors of this department, the great responsibilities resting upon the surgical staff, and the importance of holding out inducements to men of the highest professional attainments to enter the public service, the writer makes some excellent suggestions for alterations in the present system, as follows:

"It has been estimated above that there are two thousand surgeons in the service, and at least one hundred thousand patients receiving their care. To the number of surgeons must be added that of nurses, ambulance corps, teamsters, cooks, &c., to arrive at the entire numerical force at the disposition and under the government of the department. This force has been estimated as high as twenty thousand; but for the present purpose, and to avoid exaggeration, let it be called sixteen thousand—a force equal numerically to a large division of the army, or to four brigades! The command of such a division embraces one major general, four brigadier generals, sixteen colonels, and sixteen lieutenant colonels. Is there not here found analogy by which to be guided in the reorganization of the medical corps?

"Giving to the Medical Department one major general, four brigadier generals, sixteen colonels, and sixteen lieutenant colonels, their disposition and authority might be determined according to the following plan:—

"1. The office of major-general to be conferred on the surgeon-general, who, as the head of the department, would exercise all the powers that officer now possesses.

"2. Of the four brigadier generals, one, the senior, should act as assistant surgeon-general, and the others be placed at the head of large armies, or have immediate superintendence over Washington or other city or locality, embracing many hospitals.

"3. Corps d'armée, small armies, and hospitals of lesser extent than designated above, to be controlled by colonels.

"4. The duties of lieutenant colonels might be found in divisions of corps d'armée and in the government of hospitals in extent corresponding to their rank.

"5. The abolishment of the offices of medical inspector-general and medical inspector, as the superior officers it is here proposed to create would exercise the functions of inspectors.

"6. The office of brigade surgeon, or, as it is now termed, surgeon of volunteers, which has the rank of major, to be continued. The number of this class of officers to be determined by the wants of the service. They could be assigned to brigades and hospitals, as at present. There might be two classes under this rank, as in the French service.

"7. Surgeons holding the rank of captains, first and second lieutenants, to be also appointed, and to have duties to perform suited to their qualification and experience.

"8. The office of medical cadet to be continued in such manner as will ensure the services of young men of good character and attainments, and who are desirous of qualifying themselves for the place of surgeon.

"The reorganization of this important department of the military forces of the United States, according to some plan similar to that here suggested, would be attended with results the most beneficial to the country. Individual merit would be encouraged, and the means of honoring it by promotion secured by it, and the grades of position and authority being symbolized by rank, would insure that 'order, vigilance and discipline' so necessary to the effectiveness of military operations."

MEDICAL GRADUATES AT YALE COLLEGE.—The following gentlemen received the degree of M.D. at the late commencement of the Medical Department of Yale College, at New Haven:—Judson Boardman Andrews, Mechanicsville, N. Y.; Albert Gordon Browning, Woodstock; Henry Sylvester Cornwell, New London; Marcus Brutus Fisk, Stafford; Newton Bushnell Hall, Branford; Cyrus Edward Humiston, Cheshire; Charles G. G. Merrill, Newburyport, Mass.; William Chester Minor, New Haven; William Burritt North, New Britain; Charles Joseph Tennant, Franklin, N. Y.; Frank Benjamin Tuttle, Naugatuck.

ARMY MEDICAL INTELLIGENCE.—Dr. Edward B. Dalton, Surgeon of the 36th N. Y. Vols., has been appointed Medical Inspector of the 6th Army Corps.

Dr. A. W. Whitney, of Framingham, Surgeon of the 13th Mass. Regt., has been appointed Chief Medical Director of the 2d Div., 1st Army Corps, of the Army of the Potomac.

Dr. N. Mayer, of Hartford, Ct., has been appointed Surgeon of the 16th Conn., *vice* Dr. Warner resigned.

Dr. Henry Bostwick, of Bridgeport, Ct., and Surgeon in the United States service, died in New Orleans on the 31st ultimo.

Dr. John V. P. Quackenbush, of Albany, has been appointed Surgeon-General of the State of New York, Dr. Vanderpoel, late Surgeon-General, having resigned the office.

The number of sick and wounded in the hospitals in Washington, Georgetown and Alexandria, on January 16th, is stated to have been 9,959—a less number than for over a year past. There are 4,581 vacant beds in the hospitals. All the churches in Washington which have been used as military hospitals, except Trinity Church, have been restored to their respective congregations.

MEDICAL MISCELLANY.—Dr. Anderson has been chosen President of the New York Academy of Medicine, and Dr. D. S. Conant President of the New York Pathological Society.—The 97th Annual Meeting of the New Jersey State Medical Society was held at Jersey City on the 21th inst.—The 56th Annual Meeting of the New York State Medical Society will be held at Albany on the 3d of February—to be continued on the three succeeding days.—The births in New London, Ct., were 193 during the year 1862; deaths, 180, including five killed in battle. In Brooklyn, Ct., number of births during the year, 52; deaths, 36. In Preston, Ct., births, 50; marriages, 9; deaths, 46. In Abington, Ct., of 16 deaths in 1862, six were men between 70 and 93 years of age.—The late Dr. Harsen, of N. Y., whose lamented death was recently announced, left \$10,000 as a legacy to the New York Eye Infirmary, of which institution he was one of the vice presidents.

DIPHTHERIA.—In our next issue will appear the first part of a valuable paper on Diphtheria, by Prof. Chapman, of Brooklyn, N. Y., to be continued in several succeeding numbers.

THE New York *Medical Times* publishes wood-cuts of no less than fifteen instruments found at the establishment of a notorious abortionist of that city. For whose special benefit this exhibition is made, is not stated.

VITAL STATISTICS OF BOSTON.

FOR THE WEEK ENDING SATURDAY, JANUARY 24th, 1863.

DEATHS.

	Males.	Females.	Total.
Deaths during the week	45	45	90
Ave. mortality of corresponding weeks for ten years, 1853—1863,	40.4	39.0	79.4
Average corrected to increased population	00	00	87.54
Death of persons above 90	0	0	0

Mortality from Prevailing Diseases.

Phthisis.	Croup.	Scar. Fev.	Pneumon.	Variola.	Dysentery.	Typ. Fever.	Diphtheria.
17	4	6	3	1	0	1	0

DEATHS IN BOSTON for the week ending Saturday noon, Jan. 24th, 90. Males, 45—Females, 45.—Abscess, 1—accident, 1—apoplexy, 2—asthma, 1—disease of the bowels, 1—inflammation of the bowels, 2—congestion of the brain, 1—disease of the brain, 2—inflammation of the brain, 2—bronchitis, 1—cancer, 1—colic (bilious), 1—consumption, 17—convulsions, 1—croup, 4—diarrhea, 1—dropsy, 3—dropsy of the brain, 4—erysipelas, 2—fever, 1—scarlet fever, 6—typhoid fever, 1—haemorrhage, 2—disease of the heart, 4—infantile disease, 6—laryngitis, 2—congestion of the lungs, 1—inflammation of the lungs, 3—marasmus, 4—old age, 1—paralysis, 2—puerperal disease, 1—smallpox, 1—disease of the spine, 1—inflammation of the mucous membrane of the stomach, 1—teething, 1—unknown, 4.

Under 5 years of age, 33—between 5 and 20 years, 8—between 20 and 40 years, 14—between 40 and 60 years, 21—above 60 years, 14. Born in the United States, 66—Ireland, 19—other places, 5.

